Hazardous Materials Survey Report and Register

Site Address:

Liverpool Hospital,

Liverpool NSW

Client Name:

South Western Sydney LHD

TABLE OF CONTENTS

Site Details

Site Address:	Liverpool Hospital, Liverpool NSW
Prepared for:	South Western Sydney LHD
Client Address:	C/- Liverpool Hospital, Elizabeth Street, Liverpool NSW 2170
Date of Inspection:	15-16 April 2019

Hazardous Materials Survey Report and Register Prepared By

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Project Details

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Revision No	Date Issued	Reason/ Comments
0	28.02.06	Original (Part 1)
0	30.06.06	Original (Part 2)
1	09.04.09	Re-Survey
2	01.04.10	Re-Survey
3	23.08.11	Re-Survey
5	12.11.12	Re-Survey
6	23.12.14	Re-Survey (Asbestos)
7	22.01.15	Re-Survey (Asbestos) ISD Building & Ron Dunbier
8	09.05.19	Re-Survey

DISTRIBUTION

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1	0	South Western Sydney LHD
2	0	Environmental Monitoring Services Pty Ltd

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2 EXECUTIVE SUMMARY

Environmental Monitoring Services (EMS) conducted a hazardous building materials survey inspection of the property.

2.1 ASBESTOS

Asbestos containing materials (ACM) were identified or assumed in the following locations at the time of inspection:

Alex Grimson Building:

- Asbestos vinyl floor sheeting with a friable fibrous backing layer throughout the lower basement level.
- Fibre cement sheeting external to the basement level is presumed to contain asbestos.
- Mastic sealant to air conditioning ductwork.
- Internal heater coils with the plantroom ductwork may contain asbestos.
- Fibre cement internal and external sheeting to the inter-building walkway.
- Fire doors with internal asbestos cores throughout. Timber veneered doors with black spine tags are all asbestos containing and all doors should be checked prior to any drilling or disposal.
- Bituminous membrane around the large water tank within the plant room.
- Electrical transformer and distribution board equipment presumed to contain asbestos materials internally.
- Original calorifier gaskets may contain asbestos.

Don Everett Building:

- Electrical backing boards throughout the building.
- Fire doors with internal asbestos cores throughout, including with the rooftop plantroom roof cavity. Timber veneered doors with black "Padde" spine tag are all asbestos containing and all doors should be checked prior to any drilling or disposal.
- Door/window panel putty sealant identified on the ground floor.
- Mastic sealant to air conditioning ductwork.
- Internal heater coils with the plantroom ductwork may contain asbestos.
- Sprayed duct insulation with the rooftop plantroom contains asbestos.
- External eaves and awnings.

Ron Dunbier Building:

- Fire doors with internal asbestos cores throughout.
- Fibre cement pipework used as drainage externally and within toilet risers internally.
- Electrical backing boards and panelling throughout.
- Gaskets in the upper floor plantroom are presumed to contain asbestos.

Central Energy Building:

- Fibre cement drainage pipe on the eastern external side of building.
- Electrical backing boards and panelling throughout the switchroom and in the backup generator room.
- Gasket material to original pipework flanges, primarily in the southern side of the building, both internally and externally.

C Core Building, Merit, BIU Admin, Supply Department, C Core Buildings Group of Demountables:

- Fibre cement sheeting used for eave linings and within ceiling spaces.

Bigge Park Centre:

- Fibre cement sheet lining to bulkhead / duct work throughout the ground level and the file room ceiling on the ground floor contains asbestos. This is beneath the non-asbestos vermiculite coating.
- Internal heater coil with the kitchen ductwork may contain asbestos.
- Electrical distribution board within the office area presumed to contain asbestos.
- Original disused oil heater beneath stairwell presumed to contain asbestos.

Asbestos mastic sealant has been used in sections of window pane and air conditioning ductwork seals throughout, particularly in the Alex Grimson & Don Everett Buildings.

Asbestos materials are assumed to be present within some plant equipment throughout the site.

Asbestos gaskets have been used within flanges throughout the site, generally in plant room-type locations.

Fire doors with internal asbestos core insulation have been used in numerous buildings, particularly in the Alex Grimson, Ron Dunbier & Don Everett Buildings.

Asbestos containing components are assumed to have been used in the electrical distribution boxes and panelling throughout the site.

Refer to the detailed asbestos register in Section 7

If asbestos or asbestos containing materials have been identified or assumed to be present at a workplace, SafeWork NSW stipulates that an Asbestos Management Plan be prepared and maintained to ensure that the information is up-to-date.[1]

Recommendations

Information on the management of identified ACM including a risk assessment, recommended remedial action (if any) and general guidelines are in the Asbestos Management Plan – Report No. EMS19 6724.

All asbestos materials should be periodically re-inspected for any signs of deterioration.

[1] SafeWork NSW Code of Practice | How to Manage and Control Asbestos in the Workplace (2016), Section 4

Asbestos containing materials should be labelled in accordance with current Work Health and Safety Regulations.

As the inspection was carried out in a non-destructive manner in occupied buildings, further investigation is recommended in some areas prior to refurbishment / demolition work.

In particular, full access to ceiling and sub-floor areas was restricted.

No demolition or refurbishment works to be conducted in bathrooms or wet areas, prior to a competent person investigating beneath the outer surface

All fire doors which are not known to be new, should be checked prior to any drilling or their disposal.

The Hazardous Materials Register or Asbestos Management Plan is not intended to be used as a removal Scope of Works.

2.2 LEAD IN PAINT

Indicative paint samples were collected over the years from varying locations throughout the buildings for Lead content analysis. Paint containing greater than 0.1% Lead was identified in the multiple locations, as seen in Section 9 – Lead Paint Register.

RECOMMENDATIONS: No action required based on sampling results.

It was impractical and outside the scope of this report to sample all painted surfaces for Lead content. Indicative paint samples were collected and analysed for Lead content. Any pre-1970's underlying paint, particularly to external surfaces of older buildings is likely to contain Lead and should be managed in accordance with Lead paint guidelines unless the surface is individually sampled and analysed for Lead content.

Any re-painting of surfaces identified as containing Lead should be carried out under controlled conditions by a competent person.

The management of Leaded paint should be carried out in accordance with Australian/New Zealand Standard 4361.2:2017 "Guide to Hazardous Paint Management, Part 2 Lead Paint in Residential, Public and Commercial Buildings". NOTE: The definition of a Lead paint in this Standard (issued December 2017) has been reduced to 0.1% from the previous limit of 1%. This Standard has not yet been referenced in government legislation, so is not mandatory.

Current NSW Work Health and Safety Regulations include the following activities at a workplace in their definition of a "Lead Process": machine sanding or buffing surfaces coated with paint containing more than 1% Lead and using a power tool, including abrasive blasting and high-pressure water jets, to remove a surface coated with paint containing more than 1% Lead and handling waste containing Lead resulting from the removal.

There are no standards / limits set in NSW for Lead contaminated dust in ceiling cavities.

For ceiling dust, EMS recommends using a guideline level of 0.15% which is considered appropriate for commercial / industrial ceiling and roof cavities. This is under the assumption that the ceilings are in good condition and there is minimal migration of dust from roof cavities to underlying occupied areas.

Sampling and laboratory analysis of specific areas prior to refurbishment is recommended. Remediation by a specialist removal contractor of any Lead contaminated dust is recommended if any refurbishment works are likely to disturb the dust. The dust should be removed using vacuum equipment fitted with HEPA filters to minimize the generation of Lead dust into the atmosphere.

It is recommended that any personnel entering roof cavities should wear a disposable P2 respirator and, if they are likely to make ongoing physical contact with the dust also wear disposable coveralls. The coveralls should be removed at the exit from the roof cavity.

2.3 POLYCHLORINATED BI-PHENYL'S (PCB'S)

Metal capacitors within the older style fluorescent light fittings were found within the Don Everett, Alex Grimson, Ron Dunbier and Central Energy buildings and are presumed to contain PCB's.

An older style metal capacitor was also sighted within a transformer in the Alex Grimson building.

RECOMMENDATIONS: Any older type fluorescent light fitting not detailed in this report suspected of containing a PCB capacitor should be checked by a competent person prior to disposal.

2.4 SYNTHETIC MINERAL FIBRE

SMF insulation was generally identified in the following locations:

- Insulation to the underside of the rooftop.
- Insulation to air-con ducting and pipework in ceiling cavities and riser shafts.
- Insulation within large and small hot water heaters.
- Insulation on top of ceilings in some areas.
- Insulation within fire pillows in wall and soffit penetrations.

Recommendations

SMF insulation is not classified as a hazardous material, however it should be removed under controlled conditions.

Refer to Sections 7-12 of this report for more detailed information.

3 SCOPE OF WORKS

Environmental Monitoring Services Pty Ltd was requested by South Western Sydney LHD to conduct a hazardous building materials survey inspection of Liverpool Hospital, Liverpool NSW and prepare a report and register based on the findings of the inspection and laboratory analysis.

A person with management or control of a workplace must ensure, so far as is reasonably practicable, that all asbestos and asbestos containing materials at the workplace is identified by a competent person.[2]

For the purpose of this report hazardous materials are defined as asbestos containing materials (ACM's), lead based paints, PCB's in older style fluorescent light fittings and synthetic mineral fibre (SMF) insulation.

NOTE: SMF materials are still extensively used in commercial and residential buildings for insulation from temperature and sound. The materials are not included in Safe Work Australia's Hazardous Substances Information System List (2014). The materials have been included in this report as excessive exposure can result in upper respiratory tract irritation and skin and eye irritation.

The survey was carried out above ground level. Telstra and/or similar type services which may contain asbestos may be present below ground level.

The scope of works was limited to a visual inspection of accessible and representative construction materials and sampling of materials where it was possible to do so without substantially damaging the host surface. Equipment not associated with the building fabric and operational services was not included in the inspection.

This asbestos and hazardous materials registers include a detailed summary of hazardous materials including asbestos containing materials (ACM) identified or assumed during the visit to the site:

Photographs of materials and sample locations are in Appendix A. Laboratory analysis reports are in Appendix B.

The Scope of Works included the following buildings (some demolished since the original survey undertaken):

Building Code	Building Name	Building Code	Building Name
LVH01	Clinical Building - Existing	LVH22	Hugh Jardine Building
LVH02	Caroline Chisholm Building	LVH23	Area admin Building
LVH03	Clinical Building - New	LVH24	Childcare Building
LVH04	Oncology Building	LVH25	Workforce Development Building
LVH05	Pathology Building (SWAPS)	LVH27	Interpreters Building
LVH06	Health Services Building	LVH28	Archive Building
LVH09	Don Everett Building	LVH29	ISD Building (new)
LVH10	Brain Injury Unit	LVH31	CCORE Building
LVH12	Mental Health Centre	LVH32	Commercial Services
LVH13	Ron Dunbier House Building	LVH33	Brain Injury Rehab Direct

[2] Work Health and Safety Regulation 2017 Part 8.3 Regulation 422

LVH15	Thomas & Moore Education	LVH34	Area Nursing
LVH16	Alex Grimson Building	LVH35	Multicultural health
LVH18	SWSLHN Building	LVH48	Service Tunnel
LVH19	Central Energy Station	-	Bigge Park Centre
LVH20	Engineering Services		

4 LIMITATIONS

The asbestos register within this document lists all identified or assumed asbestos in a workplace. It refers only to findings at the time of the inspection and is not intended *unless otherwise stated* to be a register of all asbestos containing materials prior to demolition or refurbishment of a structure.[3] The following is an extract from the Regulation.

447 Application—Part 8.6

(1) This part applies to the demolition or refurbishment of a structure or plant constructed or installed before 31 December 2003.

(2) In this clause ***demolition or refurbishment*** does not include minor or routine maintenance work; or other minor work.

448 Review of asbestos register

The person with management or control of a workplace must ensure that, before demolition or refurbishment is carried out at the workplace, the asbestos register for the workplace is;

(a) Reviewed, and

(b) If the register is inadequate having regard to the proposed demolition or refurbishment – revised.

449 Duty to give asbestos register to person conducting business or undertaking of demolition or refurbishment

The person with management or control of a workplace must ensure that the person conducting business or undertaking who carries out the demolition or refurbishment is given a copy of the asbestos register before demolition or refurbishment is commenced.

450 Duty to obtain asbestos register

A person conducting a business or undertaking who carries out demolition or refurbishment at a workplace must obtain a copy of the asbestos register from the person with management or control of the workplace, before the person commences the demolition or refurbishment.

[3] Work Health and Safety Regulation 2017 Part 8.6 Regulations 447 to 450.

The inspection was carried out in a thorough and professional manner. The survey was carried out in a non-destructive manner and due to limitations in access, EMS cannot guarantee that all hazardous materials including asbestos were identified. Inaccessible areas are generally assumed to contain asbestos unless the assessor is satisfied, based on reasonable grounds that the areas will not contain asbestos materials.[4]

Areas that generally cannot be inspected include, but are not limited to:

- Wall cavities and voids
- Inside set ceilings and below set floors
- Inside air-handling equipment
- Services shafts
- Confined spaces
- Building facades or other height restricted areas
- Materials covered or concealed by other construction materials

Without substantial demolition of a building, it is not possible to identify every possible ACM.

Caution should be exercised if any works are to be carried out in the areas noted above and any other areas identified in this report as either inaccessible or with restricted access. If any suspect materials are discovered, work should stop in the area, pending inspection by a competent person and sample analysis (if required).

Further investigation is recommended in these areas prior to refurbishment or demolition works.

References are made in this document to the extent of asbestos materials on site. These may be in the form of the number of materials, square metres etc. These references are mentioned as a guide only.

The sample analysis results can only be related specifically to the sample collected for analysis.

5 METHODOLOGY

Environmental Monitoring Services conducted the asbestos inspection as per Section 2.2 of the SafeWork NSW Code of Practice *How to Manage and Control Asbestos in the Workplace* (2016).

During the inspection, where suspected asbestos containing materials were identified, details on the location, type of material and their condition were noted.

At the discretion of the consultant, where possible a representative sample of the material was taken and placed in a plastic bag, sealed and labelled.

The samples were sent to a NATA accredited laboratory and analysed in accordance with Australian Standard 4964-2004 for Asbestos Identification using Polarising Light Microscopy with dispersion staining techniques.

[4] SafeWork NSW Code of Practice | How to Manage and Control Asbestos in the Workplace (2016), Section 2.3

Indicative samples of paint suspected of containing elevated levels of lead were sampled and analysed in accordance with the Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and / or CV/AAS by a NATA accredited laboratory.

Any fluorescent light fitting suspected of housing a PCB-containing capacitor was examined, where possible, and checked against the ANZECC database on Identification of PCB-containing capacitors. If, due to any potential electrical risk the light fitting could not be examined, the light fitting was noted and photographed.

Loose or unbonded synthetic mineral fibre (SMF) materials and SMF insulation batts were also noted and photographed to aid in management of the site, if deemed necessary.

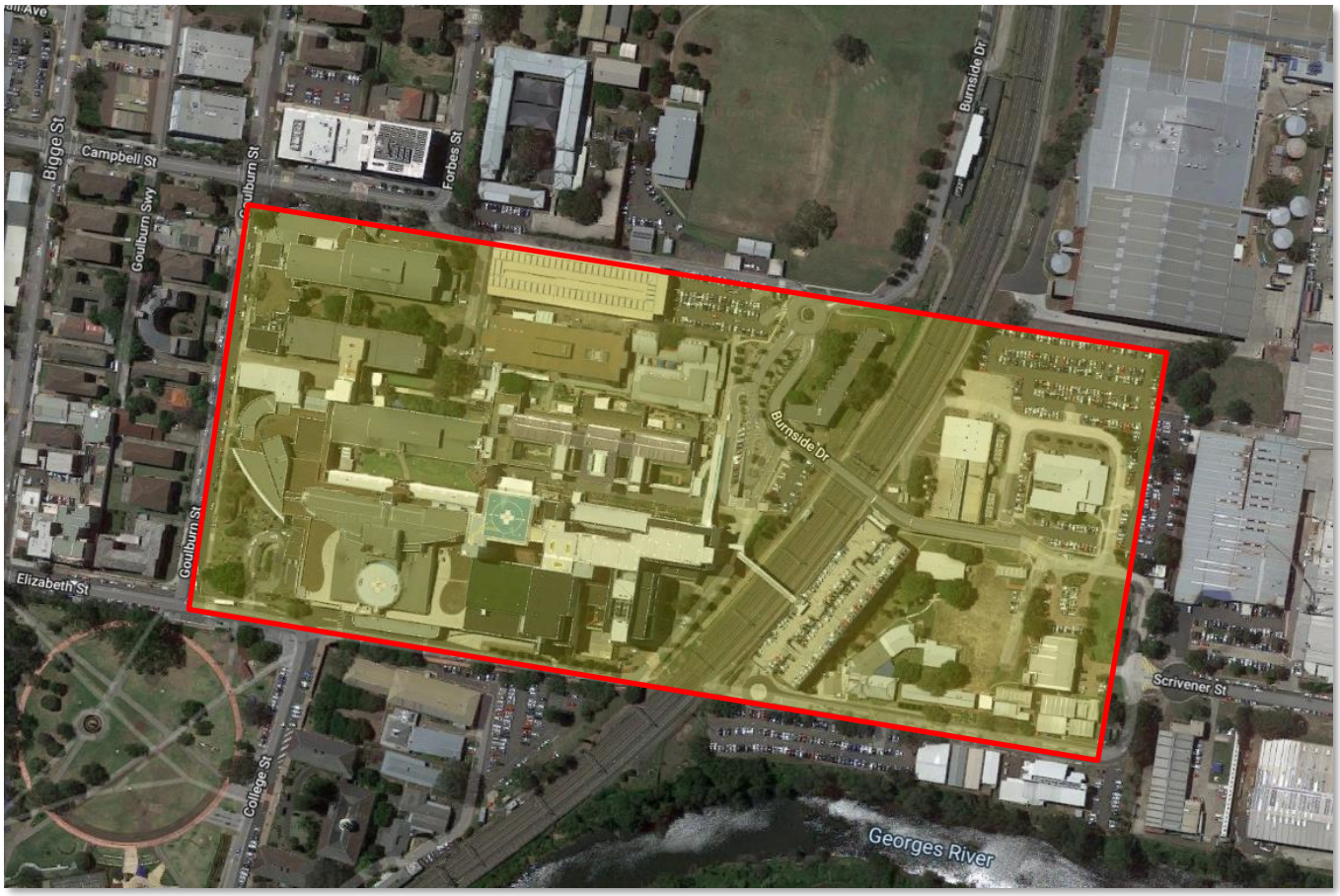
All samples were analysed by a NATA accredited laboratory, please refer to Appendix B for the laboratory report.

6 SITE DESCRIPTION

The main entrance to Liverpool Hospital is located at the eastern end of Elizabeth Street.

A cluster of buildings covering numerous medical streams are located on the western side of the railway line.

A number of the hospital's staff buildings (including the Central Energy Services, etc) are located on the eastern side of the railway line.



Map source: Google Maps

7 ASBESTOS REGISTER

Site Address: Liverpool Hospital, Liverpool NSW
Name of competent person: Edward Krasilovsky, SafeWork NSW Asbestos Assessor Licence No LAA0001095
Mark Wagner, SafeWork NSW Asbestos Assessor Licence No LAA001009
Date of Assessment: 15-16 April 2019 (latest inspection)

Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Alex Grimson Building - Basement										
Refer to N 7958	VFS with white fibrous backing	Lift foyer areas, corridors, fine needle aspiration clinic, electron microscope, western laboratory	Friable	Damaged in areas	110m^2	Yes	April 2019	Yes		1
Refer to N 7958	VFS with white fibrous backing	Staff locker rooms and amenities	Friable	Good	70m^2	Yes	April 2019	Yes		2
Refer to N 7958	VFS with white fibrous backing	Anatomical pathology, east wing, slide room, eastern exit corridor, foyer areas	Friable	Good	800m^2	Yes	April 2019	Yes in areas, beneath carpets in others		3
Refer to N 7958	VFS with white fibrous backing	Immunchisto-chemistry, foyer, store room areas and throughout west wing	Friable	Good	45m^2	Yes	April 2019	Yes		4
Refer to N 7958	VFS with white fibrous backing	South of south eastern lift shafts, pipe riser cupboard, floor	Friable	Good	2m^2	Yes	April 2019	Yes		1-4
Refer to N 7958	VFS with white fibrous backing	Fine Needle Aspiration Clinic, floor	Friable	Good	30m^2	Yes	April 2019	Yes		1-4

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Refer to N 7958	VFS with white fibrous backing	Southern general public lift foyer, main corridor area, adjacent door entrance to lift car, floor	Friable	Damaged in areas	2m^2	Yes	April 2019	Yes		1-4
Presumed	FCS	External to Pathology – between wall and soil	Non-friable	Good	-	No	April 2019	Yes		5
Presumed	Internal fibrous core insulation	Fire doors and double doors between areas and in fire stairs, wood veneered original	Friable	Good	Several	No	April 2019	Yes		-
Alex Grimson Building – Ground Floor										
N 8238	Mastic sealant	Eastern ceiling cavity, air conditioning ductwork, metal angle sealant	Non-friable	Good	Mastic found on ductwork throughout building	Yes	October 2012	Yes		6
N 8310	FCS	Eastern side, main enclosed walkway leading to Mental Health building, internal & external walls	Non-friable	Good	1000m^2	Yes	April 2019	Yes		7-8
See S7687	Internal fibrous core insulation	Fire doors between wards and fire stairs, wood veneered original	Friable	Some doors damaged	Several	No	April 2019	Yes		9-11

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Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Alex Grimson Building – First Floor										
See S7687	Internal fibrous core insulation	Fire doors between wards and fire stairs, wood veneered original	Friable	Good	Several	No	April 2019	Yes		12
Alex Grimson Building – Second Floor										
See S7687	Internal fibrous core insulation	Fire doors between wards and fire stairs, wood veneered original	Friable	Good	Several	No	April 2019	Yes		13
Alex Grimson Building – Third Floor, Plant Rooms, External										
N 8318	Mastic sealant	Main plant room north, air conditioning ductwork, open angle, mastic sealant	Non-friable	Good	-	Yes	April 2019	Yes		14
S 1632	Bituminous membrane	South western corner large water tank, bunded, internal membrane, floor	Non-friable	Good	-	Yes	April 2019	Yes		15
Presumed	Assumed asbestos materials present	Third floor, northern plant room, High Voltage Room, within electrical transformer equipment	Non-friable/ Friable	Good	-	Yes	April 2019	No		16
Presumed	Asbestos gaskets on old flanges	Throughout plant rooms, potentially to original calorifiers or pipework	Non-friable	Good	-	No	April 2019	Yes		17

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Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Presumed	Internal duct insulation	Third floor, northern plant room, a/c ductwork, heater/thermostat	Friable	Good	-	No	April 2019	No, within duct		18
S7687	Internal fibrous core insulation	Fire doors to fire stairs and switch room, wood veneered original	Friable	Good	Several	No	April 2019	Yes		19-20
Presumed	Spark arrestors, sheaths on wiring, EBB, lift brake shoes (may have been replaced), etc.	Lift motor room, electrical control panels, lift equipment - inaccessible	Non-friable/ Friable	Good	-	No	April 2019	Yes		21-22
Don Everett Building										
Presumed	EBB	Basement, north of lift foyer	Non-friable	Good	1 board	Yes	April 2019	Yes		25
Presumed	Internal materials	Basement, lift foyer, plant area, EBB's	Non-friable	Good	1 panel	Yes	April 2019	Yes		26
N 8355	Internal fibrous core insulation	Ground floor, eastern wing, main east west corridor, southern end, double fire doors	Friable	Good	Ground and first floors	Yes	April 2019	Yes		27

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Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
N 8356	Mastic sealant	Ground floor, eastern wing, eastern end, emergency exit door panel sealant around glass	Non-friable	Good	Eastern side	Yes	April 2019	Yes		28
Presumed	EBB	Ground floor, eastern wing, adjacent main nurse's office	Non-friable	Good	1 panel	Yes	December 2014	Yes		29
Refer to N 8355	Internal fibrous core insulation	First floor, eastern wing, timber veneered double fire doors marked "Padde" on spine tag	Friable	Good	First floor	Yes	April 2019	Yes		30
Refer to N 8355	Internal fibrous core insulation	First floor, eastern wing, south eastern office, single timber veneered fire doors marked "Padde" on spine tag	Friable	Good	First floor	Yes	April 2019	Yes		31
Presumed	EBB	First floor, eastern wing, corridor opposite central courtyard	Non-friable	Good	1 panel	Yes	April 2019	Yes		33
N 8359	Mastic sealant	Rooftop plant room, air conditioning ductwork, metal angle sealant	Non-friable	Good	Throughout building on ductwork	Yes	April 2019	Yes		34
Presumed	Internal duct insulation	Rooftop plant room, a/c ductwork, heater/thermostat	Friable	Good	-	No	April 2019	No, within duct		35

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Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
S7686	Fibrous insulation	Rooftop plant room, south western corner, exhaust-type ductwork, external insulation	Friable	Fair	-	No	April 2019	Yes		36
Refer to N 8355	Internal fibrous core insulation	First floor, roof top plant room, northern side, northern roof cavity, door core to small fire doors between compartments	Friable	Good	Roof cavity compartments and any other door within plantroom area	No	April 2019	Yes		37
Presumed	FCS	External, eaves	Non-friable	Good	External, northern/ southern sides	No	April 2019	No		38-39
N 9296	Compressed fibre cement sheeting	External, northern side, eastern wing, awnings above ground floor room windows	Non-friable	Good	$20m^2$	No	April 2019	Yes		39
Ron Dunbier Building										
Refer to N 8351	Internal fibrous core insulation	Ground, first & second floors, external access stairs, fire doors	Friable	Good	5-6 doors 3 levels	Yes	December 2014	No, boarded up April 2019		40
N 8348	Moulded fibre cement pipe	Ground, first & second floors, individual units, toilet pipe riser shaft	Non-friable	Good	Throughout building Unknown length	No	October 2012	No, boarded up April 2019		41
Presumed	Transformers Internal materials	Transformer rooms	Non-friable	Good	-	Yes	January 2015	No, boarded up April 2019		42

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Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Presumed	EBB	Ground floor, south eastern 415 volt plant room, wall mounted	Non-friable	Good	1 panel	Yes	January 2015	No, boarded up April 2019		43
Presumed	Internal materials EBB	Ground floor, south eastern corner, adjacent south eastern of post boxes	Non-friable	Good	1 panel	Yes	January 2015	No, boarded up April 2019		44
Presumed	Internal materials EBB	Ground floor, north eastern corner	Non-friable	Good	1 panel	Yes	January 2015	No, boarded up April 2019		-
Presumed	Internal materials EBB	First floor, south eastern RDLF room, EBB	Non-friable	Good	1 panel	Yes	January 2015	No, boarded up April 2019		-
Presumed	Gaskets	Upper floor Plant Room on pipework and between flanges	Non-friable	Average	Several gaskets	No	January 2015	No, boarded up April 2019		45
Refer to N 8349	Fibre cement half pipes	External walkway, wall water drain half pipes	Non-friable	Fair, unpainted	Approx 35 x pipes 0.2m long	Yes	April 2019	Yes		46
Central Energy Building										
N 8357	Fibre cement drain pipe	External, eastern side, driveway/roller door, floor pipe drain	Non-friable	Good	Driveway	No	April 2019	Yes		48
Presumed	EBB	Ground floor, main switch room	Non-friable	Good	Panelling	Yes	April 2019	Yes		50

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Refer to N 8366	Gaskets	Ground floor and first floor, southern side, midway, original disused pipework and exhaust pipework	Non-friable	Good	Any similar original pipework throughout plant room	No	April 2019	Yes		53
N 8366	Gasket debris	Ground floor, main plant room, south western corner, MTW heating vessel #2, above disused steam pipes, exposed pipe flange	Non-friable	Poor	Similar pipework throughout sealed flanges in plant room	Yes	April 2019	Yes		55-56
Presumed	EBB	Ground floor, backup generator room, within cupboard	Non-friable	Good	Panelling	No	April 2019	Yes		58
Presumed	Gasket	Ground floor, back-up generator room, backup compressor seals	Non-friable	Good	Back-up compressors	No	April 2019	Yes		60
Refer to N 8366	Gasket	External, western side, midway, disused boiler exhaust stacks, access panels, flanges	Non-friable	Good	Similar pipework	No	April 2019	Yes		61
Presumed	Gasket	External, south western side, large diesel tank bund (in-ground),	Non-friable	Good	Potentially several gaskets	No	April 2019	No		62

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Mark Wagner, SafeWork NSW Asbestos Assessor Licence No LAA001009
Date of Assessment: 15-16 April 2019 (latest inspection)

Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Presumed	Internal materials	External, south western side, large diesel tank bund (in-ground), Wilco electrical control boxes	Non-friable/ Friable	Good	Similar boxes within plant room	No	April 2019	Yes		63
C Core Building, Merit, BIU Admin, Supply Department, C Core Buildings Group of Demountables										
S 1737	FCS	External, eave linings	Non-friable	Good	100m^2	Yes	April 2019	Yes		64-66
N 8361	FCS	Internal, roof space of C Core Demountable	Non-friable	Damaged	Small	No	October 2012	Yes		67
Bigge Park Centre										
S5609	FCS	Ground level, Kitchen – Duct/upper wall	Non-friable	Fair	6m^2	Yes	April 2019	Yes		69
Presumed	Internal asbestos insulation materials	Kitchen – heater duct	Friable	Good	Lining of the heater bank	Yes	April 2019	No		70
S5610	FCS	File Room – Ceiling lining, behind non-asbestos vermiculite	Non-friable	Fair	20m^2	Yes	April 2019	Yes		71
Refer to S5609	FCS	Ground level, Hallway – Duct	Non-friable	Good	20m^2	No	April 2019	Yes		72
Presumed	EBB	Offices, wall mounted electrical distribution board	Non-friable	Good	1 board	No	April 2019	Yes		73

Site Address:	Liverpool Hospital, Liverpool NSW
Name of competent person:	Edward Krasilovsky, SafeWork NSW Asbestos Assessor Licence No LAA0001095 Mark Wagner, SafeWork NSW Asbestos Assessor Licence No LAA001009
Date of Assessment:	15-16 April 2019 (latest inspection)

Sample No.	Description	Specific Location	Friable/ Non-friable	Condition	Extent	Material Labelled?	Date last Inspected	Is this an accessible area?	Date of Remedial Action	Photo No.
Presumed	Internal asbestos materials	Beneath stairwell – original oil heater may contain asbestos materials internally	Non-friable/ friable	Good	-	No	April 2019	Yes		74

Notes:

- This register should be reviewed at least once every five (5) years to ensure it is kept up-to-date. [5]
- The Remedial Action text box is to be filled in by hand on site at the completion of asbestos works such as encapsulation or removal.
- FCS = Fibre Cement Sheeting.
- EBB = Electrical Backing Board.
- VFS = Vinyl Floor Sheeting.
- Fire doors installed prior to 1980 are assumed to contain asbestos door cores.
- All extents given are approximate only. For the purpose of removal, it is recommended that a separate specific assessment be made.
- Refer to the Inaccessible / Restricted Areas table within this report for locations and materials on site that may contain asbestos.
- If there are any inaccessible / restricted areas that have been identified by a competent person as likely to have asbestos containing materials, it should be assumed they contain asbestos until they are accessed and it is determined whether asbestos is present or not.
- All samples were analysed by a NATA accredited laboratory. Refer to Appendix B for the laboratory report.

[5] *Work Health and Safety Regulation 2017 – Clauses 426 and 430*

8 ASBESTOS FREE MATERIALS SUMMARY

Sample No.	Location	Description	Comments	Photo No.
S5605	Don Everett to BIRU walkway	External walkway panelling	A sample of this material is ***free*** of asbestos	-
S5606	Bigge Park Centre – Ground floor Consulting Room 1	Vermiculite ceiling insulation	A sample of this material is ***free*** of asbestos	-
S5607	Bigge Park Centre – Ground floor Corridor	Vermiculite ceiling insulation	A sample of this material is ***free*** of asbestos	72
S7685	Don Everett – Room 48/49 Ground Floor East Windows	Window Mastic	A sample of this material is ***free*** of asbestos	-
S7688	Alex Grimson L3 Plant Room – HW Calorifier #2	Gasket	A sample of this material is ***free*** of asbestos	-
S7689	Alex Grimson Ground Floor Walkway – Grey Green Tile Remnants	VFT	A sample of this material is ***free*** of asbestos	-
S7697	Engineering P3 – Fire Door	Door Core	A sample of this material is ***free*** of asbestos	-
N8371	Central Energy – panel adjacent east entry door	Fibre cement sheeting	A sample of this material is ***free*** of asbestos	49
M3034	Central Energy – SE – brown door to chiller water room	Door Core	A sample of this material is ***free*** of asbestos	51-52
M3035	Central Energy – SW – joint between concrete floor slabs	Expansion Joint	A sample of this material is ***free*** of asbestos	54
M3036	Don Everett – Level 1 – Physio kitchen, yellow floor sheeting	VFS	A sample of this material is ***free*** of asbestos	32
M3037	Alex Grimson – Level 3 – HV Switch Room, walls and ceiling	Fibre cement sheeting	A sample of this material is ***free*** of asbestos	24
M3038	Caroline Chisholm – Basement, above tunnel entry wall	Bituminous Membrane	A sample of this material is ***free*** of asbestos	80

- This Summary table is not a definitive reference of asbestos free materials at the site. These samples were collected or visual observations noted to aid in management of the site.

9 LEAD PAINT REGISTER

Sample No.	Location	Colour	Condition	Extent	Lead Content (% w/w)
4124/23L	Ron Dunbier, first floor, room 105, kitchen	Off white	Good	Throughout building	< 0.05
4124/24L	Ron Dunbier, first floor, room 105, kitchen	Pink	Good	Throughout building	0.08
4124/25L	Ron Dunbier, first floor, room 105, kitchen	Off white	Good	Throughout building	< 0.05
4124/26L	Ron Dunbier, third floor, main plant room, water pipes, valves, etc.	Light brown	Fair to poor	Plant rooms	0.66
4124/27L	Ron Dunbier, third floor, main plant room, ladder to roof top	Light brown	Fair to poor	Plant rooms	0.38
4124/28L	Ron Dunbier, third floor, fire stairs railing	Yellow	Good to fair	Throughout building	0.06
4124/29L	Ron Dunbier, external timber gates/fencing	Light pink	Poor to very poor	External building	0.10
4124/52L	Child Care Centre, main foyer	Off white	Good	Door frames	< 0.05
4124/53L	Child Care Centre, main foyer	White	Good	Skirting boards	< 0.05
4124/54L	Child Care Centre, external, north	White	Good	External building	< 0.05
4124/55L	Don Everett, ground floor, eastern wing, main foyer, adjacent hallway	Light blue	Good	Throughout building	< 0.05

Sample No.	Location	Colour	Condition	Extent	Lead Content (% w/w)
4124/56L	Don Everett, ground floor, eastern wing, south eastern disabled toilet	Grey	Good to fair	Throughout building	< 0.05
4124/57L	Don Everett, ground floor, western wing, south eastern office	Light blue	Good	Throughout building	< 0.05
4124/58L	Don Everett, ground floor, western wing, south eastern office	Orange	Good	Throughout building	0.08
4124/59L	Don Everett, ground floor, western wing, south eastern office	Orange	Good	Throughout building	0.59
4124/60L	Don Everett, roof top plant room, north western corner air conditioning duct work	Cream	Fair to poor	Plant rooms	1.1
4124/61L	Don Everett, first floor, eastern of lift foyer, northern side, main east-west corridor	Cream	Good	Throughout building	< 0.05
4124/62L	Don Everett, first floor, eastern of lift foyer, northern side, north western room	Blue	Good to fair	Throughout building	0.20
4124/63L	Don Everett, basement, plant room, heater hot water pipes	Cream	Good to fair	Plant rooms	0.05
4124/64L	Don Everett, basement, plant room, heater hot water pipes	Red	Good to fair	Plant rooms	0.40
4124/65L	Tunnel, beneath Don Everett building, large condensate water pipes	Silver	Good to fair	Plant rooms	0.11
4124/66L	Tunnel, beneath Don Everett building, compressed air pipe	Blue	Good to fair	Tunnel	< 0.05

Sample No.	Location	Colour	Condition	Extent	Lead Content (% w/w)
4124/67L	Alex Grimson, ground floor, southern wing, clinical nurses education	White	Good to fair	Throughout building	< 0.05
4124/68L	Alex Grimson, ground floor, southern wing, clinical nurses education	Light blue	Good	Throughout building	0.21
4124/69L	Alex Grimson, ground floor, southern wing, clinical nurses education,	White	Good	Throughout building	0.32
4124/70L	Alex Grimson, ground floor, eastern wing, north eastern fire stairs	Cream	Good	Throughout building	0.08
4124/71L	Alex Grimson, northern plant room, air conditioning system, ductwork	Yellow	Good to fair	Plant room	0.43
4124/72L	Alex Grimson, northern plant room, northern side, cold water domestic tank	Blue	Good	Throughout building	< 0.05
4124/73L	Alex Grimson, south eastern main walkway to Mental Health, external	Cream	Good to fair	Walkway	< 0.05
4124/74L	Alex Grimson, south eastern main walkway to Mental Health, external, north side, western end, fire door	White	Poor	Fire doors	0.48
4124/76L	Alex Grimson, third floor, lift motor room, lift motor plant	Aqua	Fair to poor	Plant rooms	0.33
4124/77L	Health Service, level 4, plant room, air conditioning ductwork	Aqua	Good	Plant rooms	0.51
4124/78L	Caroline Chisholm, level 3, plant room, green water pipes	Green	Good to fair	Plant rooms	2.3

Sample No.	Location	Colour	Condition	Extent	Lead Content (% w/w)
4124/79L	Caroline Chisholm, level 3, plant room, air conditioning ductwork	Aqua	Good	Plant rooms	< 0.05
4124/83L	Central Energy, main plant room, south eastern corner, York chiller units	Aqua	Good to fair	Throughout building	0.64
4124/84L	Central Energy, south western MTW heater vessel, condensate water pipes	Silver	Poor to very poor	Throughout building	1.3
4124/85L	Central Energy, north western boiler units, associated pipework	Red	Good to poor	Throughout building	0.62
4124/86L	Central Energy, main planter room, internal perimeter wall	White	Good to fair	Throughout building	< 0.05
4124/87L	Central Energy, external	White	Good to fair	Throughout building	0.36
L 685	Engineering Department, main office workshop	Blue	Good	Throughout building	< 0.05

Notes:

- Lead paint is defined as a paint film that contains greater than 0.1% Lead by mass in the dry film
- Lead-free paint is a paint that contains less than, or equal to, 0.1% Lead by mass in the dry film

The above definitions are from Australian/New Zealand Standard 4361.2:2017 "Guide to Hazardous Paint Management, Part 2 Lead Paint in Residential, Public and Commercial Buildings".

10 POLYCHLORINATED BIPHENYL (PCB) REGISTER

Type	Location	Description	Condition	Removal Priority	Photo No.
Light	Don Everett – Level 1, eastern wing, western offices area	Twin, 900mm, fluorescent light fittings	Intact – no visual evidence of leaking	Prior to disposal of light fitting	-
Light	Alex Grimson - Basement, western wing morgue, amenities/toilet	Twin, 900mm, fluorescent light fittings	Intact – no visual evidence of leaking	Prior to disposal of light fitting	-
Transformer	Alex Grimson - Transformers in the Level 3 transformer	Dielectric fluid	Intact – no visual evidence of leaking	Prior to disposal of transformer	-
Light	Central Energy - South eastern chilled water computer room	Twin, 300mm, fluorescent light fittings	Intact – no visual evidence of leaking	Prior to disposal of light fitting	-
Light	Ron Dunbier	Single fluorescent light fittings	Intact – no visual evidence of leaking	Prior to disposal of light fitting	47

Note:

- PCB containing capacitors are generally identified as cylindrical or rectangular aluminium or tin containers with 2 terminals.

11 INACCESSIBLE AREAS / RESTRICTED ACCESS

Photo No.	Location	Reason area was inaccessible or restricted access	Comments
Nil	**ALL AREAS** - Wall cavities, voids, riser and lift shafts	No access – physical restriction	These areas are unlikely to, but may contain asbestos materials
Nil	**ALL AREAS** – Ceiling and roof cavities	Very limited access – physical and height restrictions	These areas are unlikely to, but may contain asbestos materials
Nil	**ALL AREAS** – Sub-floors	Very limited access – physical restrictions	These areas are unlikely to, but may contain asbestos materials
Nil	**ALL AREAS** – Older-type air-con ducts	No access – physical restriction	Competent person should check inside any original ducts prior to any upgrade or demolition, particularly for any asbestos insulation around heating coils which is generally deemed friable asbestos
81	**Ron Dunbier Building**	No access – physical restriction – boarded up	Building presumed to still contain all asbestos items as per previous Asbestos inspection
-	**ALL AREAS – Bathrooms/wet areas**	Tiled or continuous wall sheeting e.g. Whiterock	**No demolition or refurbishment works to be conducted in bathrooms or wet areas, prior to a competent person investigating beneath the outer surface**
GASKETS – It is generally not possible to sample pipe gaskets during a non-invasive inspection. Any older type gaskets suspected of containing asbestos should be checked by a competent person prior to replacement or demolition.			
OLDER-TYPE ELECTRICAL CABINETS – Any older-type electrical cabinet not identified in this report should be checked by a competent person prior to upgrade or replacement.			
All areas that were identified as containing asbestos materials but were inaccessible at the time of reinspection in April 2019, are assumed to still contain these materials and the register reflects that by stating the date last inspected as a date last inspected as earlier than April 2019.			

Note:

- A competent person should inspect inaccessible or restricted access areas prior to refurbishment / demolition.

12 APPENDIX A: PHOTOGRAPHS

Photograph 1:

Alex Grimson, Identical throughout Basement level
Asbestos backed brown vinyl sheeting

Note: Damage to the floor with asbestos backing visible beneath tile. Damaged sections of flooring should be sealed and/or covered as soon as possible to prevent potential fibre release

Photograph 2:

Alex Grimson – Basement Locker Rooms / Amenities
Asbestos backed vinyl floor sheeting

Photograph 3:

Alex Grimson, Identical throughout Basement level
Asbestos backed brown vinyl sheeting

Photograph 4:

Alex Grimson, Pathology Slide Room, Identical throughout Basement level

Asbestos backed brown vinyl sheeting

Photograph 5:

Alex Grimson, External to Pathology in basement

Fibre cement sheeting between soil and wall of building is presumed to contain asbestos

Photograph 6:

Alex Grimson - Ground Floor East Ceiling cavity

Asbestos containing air conditioning duct mastic sealant

Photograph 7:

Alex Grimson Ground Floor walkway to Mental Health Building – Internal and external walls

Asbestos cement sheeting

Photograph 8:

Alex Grimson Ground Floor walkway to Mental Health Building – Internal and external walls

Asbestos cement sheeting

Photograph 9:

Alex Grimson Ground Floor – Original Wood Veneered Fire Doors throughout

Asbestos core within

Photograph 10:

Alex Grimson Ground Floor– Original Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 11:

Alex Grimson Ground Floor– Original Wood Veneered Fire Doors throughout
Asbestos core within

Note: Damage to door with asbestos core visible. Damaged section of door should be sealed as soon as possible to prevent potential fibre release

Photograph 12:

Alex Grimson First Floor– Original Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 13:

Alex Grimson Second Floor – Original Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 14:

Alex Grimson, Plant Room – Mastic Sealant to Air Conditioning Ductwork

Photograph 15:

Alex Grimson - Plant Room
Bituminous membrane, bunded, to the south western corner of the large water tank all the way to the floor

Photograph 16:

Alex Grimson, Plant Room – High Voltage Room

Assumed asbestos backing boards and/or components within electrical transformer equipment

Photograph 17:

Alex Grimson - Plant Room

Calorifier flange gaskets should be presumed to contain asbestos and checked prior to disposal

Photograph 18:

Alex Grimson - Plant Room

Heater coils may contain asbestos insulation internally. Should be checked prior to disposal

Photograph 19:

Alex Grimson Plant Room – Original Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 20:

Alex Grimson Lift Motor Room – Original Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 21:

Alex Grimson, Lift Motor Room
Assumed asbestos brake shoes to lift motor

The brake shoes appear to be modern and may have been upgraded since the previous inspection

Photograph 22:

Alex Grimson, Lift Motor Room
Assumed asbestos backing board within electrical cabinet

Photograph 23:

Alex Grimson, Lift Motor Room
Rooftop sheeting lined with foil backed synthetic mineral fibre insulation

Photograph 24:

Alex Grimson, High Voltage Switch Room,
Fibre cement wall and ceiling sheeting is free of asbestos

Photograph 25:

Don Everett Building – Basement
EBB on wall adjacent to the lift foyer

Photograph 26:

Don Everett Building – Basement
Lift foyer electrical cabinets are presumed to contain asbestos materials internally

Photograph 27:

Don Everett Ground Floor – Fire Doors
Asbestos cement core insulation

Photograph 28:

Don Everett Ground Floor Exit
Asbestos door/window panel putty sealant

Photograph 29:

Don Everett Ground Floor
Eastern wing adjacent main nurses office.
Assumed EBB within

Photograph 30:

Don Everett First Floor – Wood veneered double fire Doors
Asbestos cement core insulation

Photograph 31:

Don Everett First Floor – Fire Doors
Wood Veneered Fire Doors throughout
Asbestos core within

Photograph 32:

Don Everett Building First Floor
Yellow vinyl floor sheeting within eastern Physiotherapist kitchen is free of asbestos

Photograph 33:

Don Everett First Floor Eastern Wing In corridor adjacent to central courtyard EBB presumed to contain asbestos

Photograph 34:

Don Everett, Plant Room – Air conditioning duct work

Asbestos containing mastic sealant

Photograph 35:

Don Everett, Plant Room – Air conditioning duct work

Heater coils may contain asbestos insulation internally. Should be checked prior to disposal

Photograph 36:

Don Everett, Roof top Plant Room south west area – Exhaust type duct work

Asbestos insulation material

Photograph 37:

Don Everett, Roof top Plant Room
Small original fire doors between compartments in roof cavity area above consulting rooms
Presumed asbestos core within

Photograph 38:

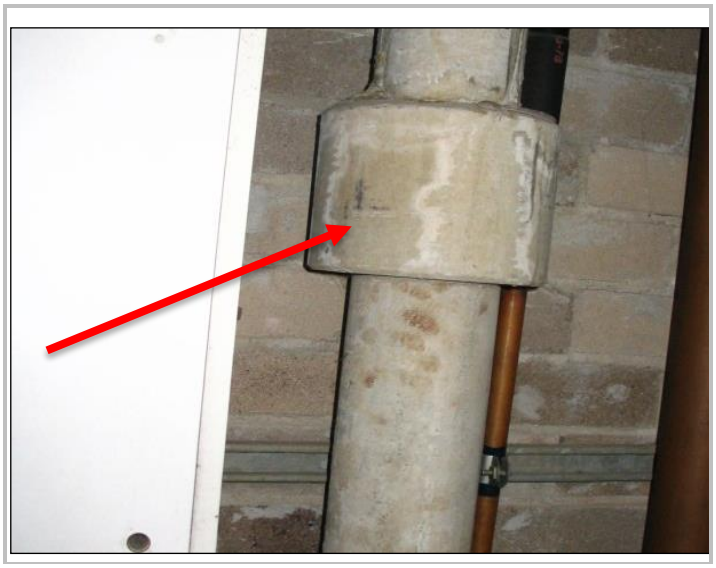
Don Everett, External eaves lining
Assumed asbestos cement sheeting

Photograph 39:

Don Everett, Exterior North face awnings
Asbestos cement panelling

Photograph 40:

Ron Dunbier Building ground, first and second floor, external access stair fire doors
Asbestos core to door



Photograph 41:

Ron Dunbier, units – Toiler riser
Asbestos cement pipework

Photograph 42:

Ron Dunbier – Transformer rooms throughout
Electrical distribution panelling

Photograph 43:

Ron Dunbier Ground Floor – Transformer room

Wall mounted electrical backing board panel

Photograph 44:

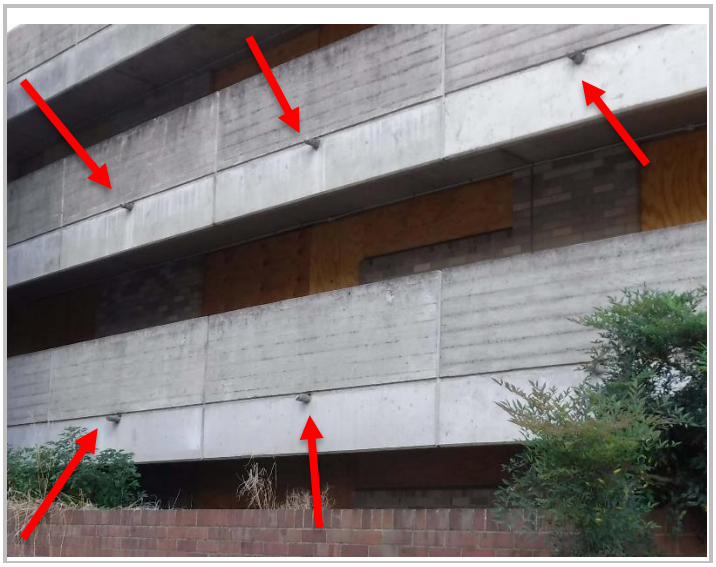
Ron Dunbier – Transformer rooms throughout

Electrical distribution panelling

Photograph 45:

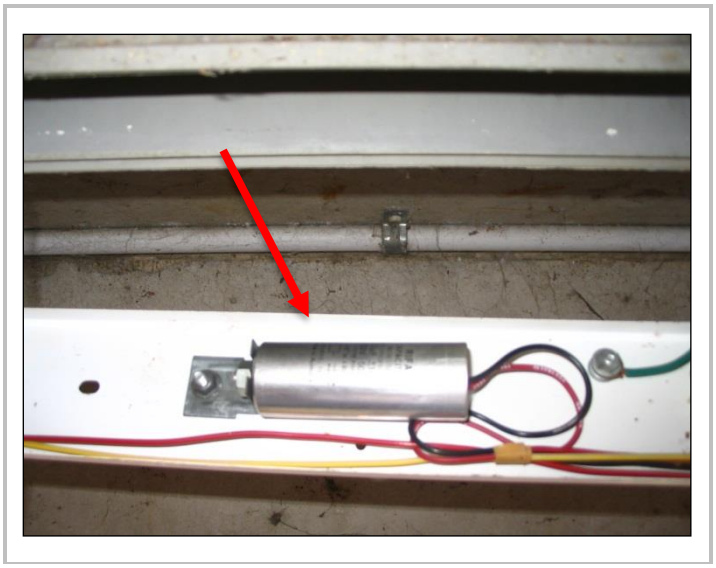
Ron Dunbier – Plant Room Upper Floor

Original gaskets assumed to contain asbestos



Photograph 46:

Ron Dunbier External walkway & walls
Asbestos drainage half pipes



Photograph 47:

Ron Dunbier – Fluorescent light fittings
PCB containing capacitors to older light fittings

Photograph 48:

Central Energy – Exterior drainage pipe
Asbestos cement pipe in ground

Photograph 49:

Central Energy – Adjacent front entrance and roller door

Cement sheet panel is free of asbestos

Photograph 50:

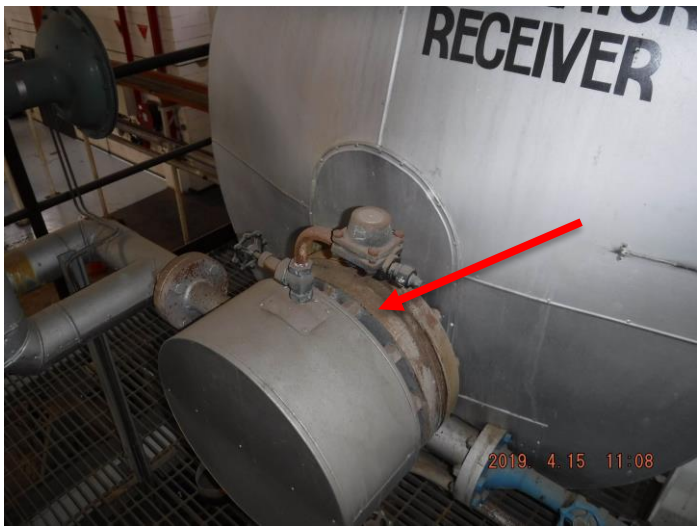
Ground floor, ground floor, south area, main switch room, EBBs presumed to be present internally within equipment

Photograph 51:

Central Energy, ground floor, south eastern area, Chiller Water Room door core is free of asbestos

Photograph 52:

Central Energy, ground floor, south eastern area, Chiller Water Room door core is free of asbestos

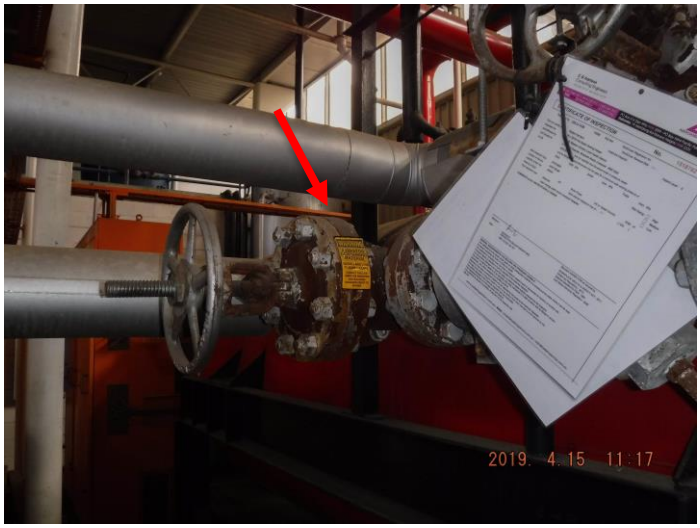


Photograph 53:

Central energy, level one, south western area, deaerator receiver, gaskets to pipework on flanges presumed to contain asbestos

Photograph 54:

Central Energy, ground floor, south western area, joints between floor slab free of asbestos



Photograph 55:

Central Energy, ground floor, above north eastern MTW heating vessel no. 2.
Asbestos debris to pipe flange

Photograph 56:

Central Energy, ground floor, above north eastern MTW heating vessel no. 2.
Asbestos debris to disused pipe / exposed flange

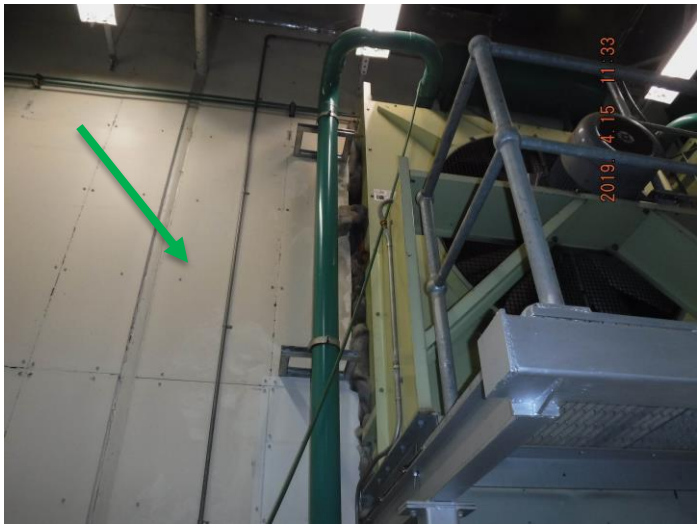
Photograph 57:

Central Energy, ground floor, south western corner of main plant room,
Gaskets to original pipework

Photograph 58:

Central Energy, ground floor, southern side, backup generator room

EBBs presumed to be present internally within equipment



Photograph 59:

Central Energy, ground floor, southern side, backup generator room

Fibre cement sheeting is free of asbestos

Photograph 60:

Central Energy, ground floor, southern side, backup generator room

Gaskets to flanges of small compressors may contain asbestos

Large backup generators within room are of a modern variety

Photograph 61:

Central Energy, external south western side, gaskets to pipework flanges presumed to contain asbestos

Photograph 62:

Central Energy – External south western side

Assumed asbestos materials within large diesel tank

Photograph 63:

Central Energy – External south western side

Electrical control boxes may contain asbestos materials internally

Photograph 64:

C Core Building, Merit, BIU Admin, Supply Department, C Core Buildings Group of Demountables

Asbestos cement eaves linings

Photograph 65:

C Core Building, Merit, BIU Admin, Supply Department, C Core Buildings Group of Demountables

Asbestos cement eaves linings

Photograph 66:

C Core Building, Merit, BIU Admin, Supply Department, C Core Buildings Group of Demountables

Asbestos cement eaves linings

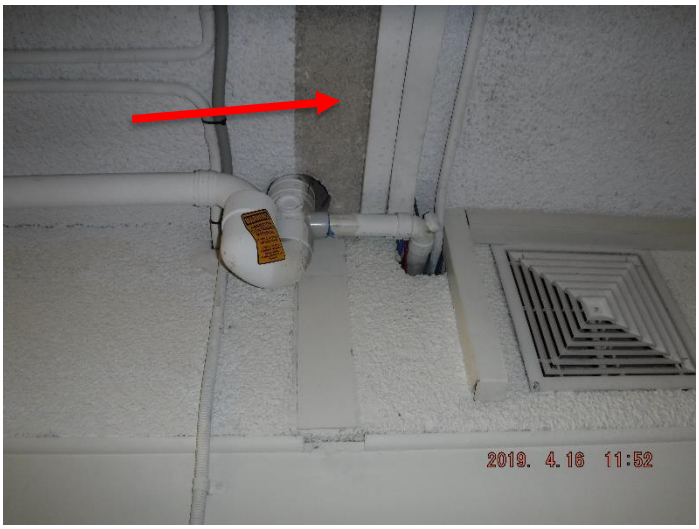
Photograph 67:

C Core Demountable – Roof space
Asbestos cement wall sheeting

Photograph 68:

Bigge Park Centre
Kitchen – Floor
Asbestos cement floor tiles previously located within kitchen.

These are assumed to have been removed and not simply covered, but care should be taken if current flooring is removed.



Photograph 69:

Bigge Park Centre - Kitchen
Asbestos cement sheeting to duct work/bulkheads
Non asbestos vermiculite throughout

Photograph 70:

Bigge Park Centre - Kitchen heater duct
Assumed asbestos containing insulation materials within

Photograph 71:

Bigge Park Centre – File Room
Asbestos cement ceiling lining
Non asbestos vermiculite throughout

Photograph 72:

Bigge Park Centre - Hallway
Asbestos cement to duct work/bulkheads
Non asbestos vermiculite throughout

Photograph 73:

Bigge Park Centre – Offices
Electrical distribution board on wall may contain an asbestos electrical backing board within

Photograph 74:

Bigge Park Centre – beneath stairwell
Original disused oil heater may contain asbestos materials within

Photograph 75:

Bigge Park Centre - Toilet
Wall sheet panelling above windows constructed from modern non-asbestos materials

Photograph 76:

ISD Building – Adjacent Loading Dock
Fibre cement sheet ceiling to Loading Dock is newer material and will be free of asbestos

Photograph 77:

ISD Building – Rooftop Plant Area
Fibre cement sheet to external walls is newer material and will be free of asbestos

Photograph 78:

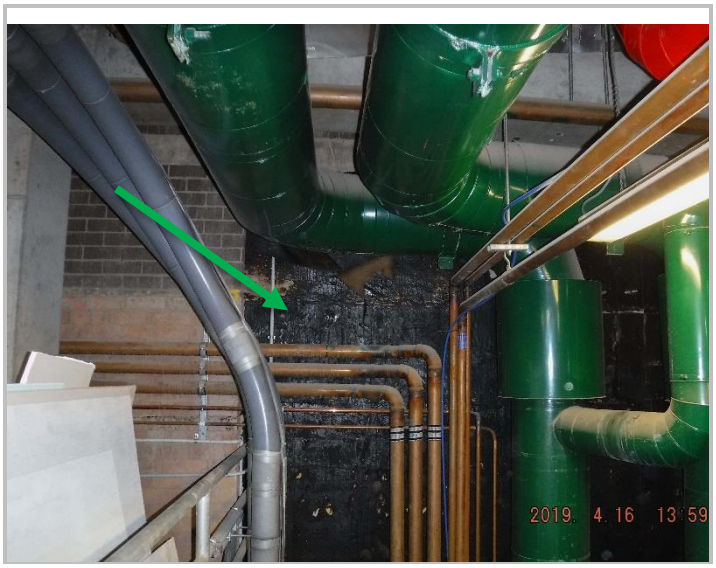
ISD Building – Throughout
Plasterboard panels throughout on walls
No asbestos sighted

Photograph 79:

ISD Building – Throughout

Plasterboard ceilings onto metal structural beams

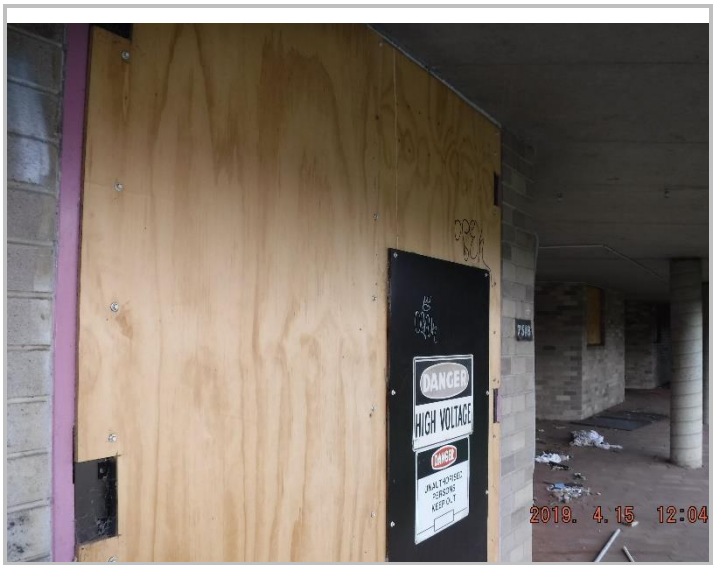
No asbestos sighted



Photograph 80:

Caroline Chisholm – Basement

Bituminous membrane on wall above tunnel entry is free of asbestos



Photograph 81:

Ron Dunbier Building –

Access restricted due to building being boarded up. It is assumed all the original asbestos remains, as per previous Asbestos inspections.

13 APPENDIX B: PREVIOUS LABORATORY ANALYSIS REPORTS

13.1 MINERALOGICAL ANALYSIS REPORTS 2006 TO 2009

Client Details: **Sydney South West Area Health Service**

Client Contact: **Wayne Rawson**

Details: **Liverpool Hospital, Engineering Department**
Scrivener Street, Warwick Farm, NSW, 2170

INTRODUCTION

Environmental Monitoring Services P/L collected samples of building materials from the above site. The samples were collected for analysis for asbestos content.

METHODOLOGY

The samples were examined under a stereomicroscope in the laboratory. Fibres suspected of being asbestos were removed from the bulk sample and examined using polarising light microscopy with dispersion staining techniques.

LIMITATION TO METHOD

The results can only be related specifically to the sample provided for analysis. Certain types of samples (e.g. vinyl flooring, epoxy resin, ore, mastics, etc.) are difficult to analyse due the sometimes low level and uneven distribution of asbestos fibres within the specific product. Issues relating to small length and diameter of the asbestos within the samples also make analysis difficult.

RESULTS

Please refer to the following pages for results from Surveys carried out in March 2009, March 2007 and June 2006.

13.1.1 MARCH 2009

Sample No.	Sample Size And Description	Asbestos Content
S 1725	Engineering Department, staff main locker room demountable building, flooring Blue with light blue and white wash pattern vinyl floor sheeting	No Asbestos Detected
S 1726	Engineering Department, fitters and plumbers workshop, flooring Blue with red & white stony pattern vinyl floor sheeting	No Asbestos Detected
S 1727	Engineering Department, fitters and plumbers workshop, flooring beneath Sample No. S 1725 Brown vinyl floor sheeting	No Asbestos Detected
S 1728	Engineering Department, fitters and plumbers workshop, ceiling Fibre cement sheeting	Chrysotile Asbestos Detected
S 1729	Engineering Department, carpenters/handyman workshop, flooring Green vinyl floor sheeting	No Asbestos Detected
S 1730	Engineering Department, sign writers workshop, flooring Light brown vinyl floor sheeting(Photo 250)	No Asbestos Detected
S 1731	Central Energy, main office, above doorway to lunch room, wall panelling Fibre cement sheeting	No Asbestos Detected
S 1732	Alex Grimson, Level 3, north plant room, south western corner large water tank, bunded area, floor Bituminous membrane	Chrysotile Asbestos Detected
S 1733	Alex Grimson, external western side, southern upper level, debris adjacent to building wall, fragment in soil Fibre cement sheet debris	Chrysotile Asbestos Detected
S 1734	Alex Grimson, external south eastern section, Health Connexions demountable building, eastern side, external lower wall sheeting Compressed fibre cement sheeting	No Asbestos Detected
S 1735	Alex Grimson, external south eastern section, Chapel/Prayer room demountable building, eave lining Fibre cement sheeting	No Asbestos Detected
S 1736	Old Drugs and alcohol Building, ground floor, south eastern office, adjacent stairs, south western pipe riser cupboard, metal pipe Fibrous dust/dirt	No Asbestos Detected
S 1737	C Core building, eave lining Fibre cement sheeting	Chrysotile Asbestos Detected

13.1.2 MARCH 2007

Sample No.	Sample Size And Description	Asbestos Content
N 9293	Child Care Centre, external eaves Fibre cement sheeting	No Asbestos Detected
N 9294	Child Care Centre, roof cavity access panel Fibre cement sheeting	No Asbestos Detected
N 9295	Don Everett, ground floor, east wing, north western area, room #31, floor Blue block pattern vinyl floor sheeting	No Asbestos Detected
N 9296	Don Everett, external, northern side, ground floor awning above windows Compressed fibre cement sheeting	Chrysotile Asbestos Detected
N 9297	Don Everett, ground floor, west wing, north eastern activities room, floor Car key (Khaki) green with white flecked vinyl floor sheeting	No Asbestos Detected
N 9298	Don Everett, rooftop plant room, north western corner, air conditioning ductwork, open angle metal duct flange, sealant Mastic sealant	Chrysotile Asbestos Detected
N 9299	Don Everett, rooftop plant room, eastern end, air conditioning ductwork, open angle metal duct flange, sealant Mastic sealant	Chrysotile Asbestos Detected
N 9300	Don Everett, roof top plant room, southern roof cavity, midway, upper wall penetration insulation Vermiculite spray	No Asbestos Detected
N 9301	Alex Grimson, ground floor, eastern wing, main east-west corridor, western end, double fire doors Internal core insulation	No Asbestos Detected
N 9302	Alex Grimson, first floor, southern wing, dialysis isolation store room, eastern cable riser, fire door Internal core insulation	No Asbestos Detected
N 9303	Drugs & Alcohol, external southern entrance, archway, stone construction, sealant Mortar	Chrysotile Asbestos Detected
N 9304	Alex Grimson, south eastern external walkway to mental health, subfloor area, eastern end, debris on ground Fibre cement sheet debris	No Asbestos Detected
N 9305	Alex Grimson, south eastern external walkway to mental health, southern side, wall to subfloor area, Fibre cement sheeting	No Asbestos Detected
N 9306	Drugs & Alcohol, ground floor, lunch room, ceiling cavity ceiling pipe penetration cover Fibre cement sheeting	No Asbestos Detected
N 9307	Health Service, level 4, plant room, southern wall Compressed fibre cement sheeting	No Asbestos Detected
N 9308	Health Service, level 4, plant room, north eastern air conditioning ductwork, open angle flange sealant Mastic sealant	No Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 9309	Caroline Chisholm, level 4 plant room, main air conditioning/exhaust ductwork, external insulation Vermiculite spray insulation	No Asbestos Detected
N 9310	Health Service, level 1, lift motor room, eastern exhaust ductwork, external insulation Vermiculite spray insulation	No Asbestos Detected
N 9311	Central Energy, south eastern chilled water computer room, floor Light brown vinyl floor tiles	No Asbestos Detected
N 9312	Central Energy, southern side, mezzanine level, south western noise baffles for backup generator room, external panels Compressed fibre cement sheeting	No Asbestos Detected
N 9313	Central Energy, external, western side, midway, vertical exhaust stakes, access panels, flanges Gasket	No Asbestos Detected

13.1.3 JUNE 2006

Sample No.	Sample Size And Description	Asbestos Content
N 7949	Hugh Jardin, roof cavity, southern end old water tanks with base Fibre cement material	Chrysotile Asbestos Detected
N 7950	Hugh Jardin, Mental Health, corridor to north eastern lunch room, ceiling Fibre cement sheeting	Chrysotile Asbestos Detected
N 7951	Hugh Jardin, eastern wing offices, main electrical distribution cupboard, ceiling Fibre cement sheeting	Chrysotile Asbestos Detected
N 7952	Hugh Jardin, south eastern office, floor beneath carpet Green with white flecked vinyl floor sheeting	No Asbestos Detected
N 7953	Hugh Jardin, external, western side covered walkways, ceiling Fibre cement sheeting	Chrysotile Asbestos Detected
N 7954	Hugh Jardin, subfloor, eastern wing, south western corner, lagged pipework Fibrous rope insulation	Chrysotile Asbestos Detected
N 7955	Building demolished	N/A
N 7956	Don Everett, Roof level, floor Bituminous membrane	No Asbestos Detected
N 8234	Alex Grimson, Ground Floor east, north western fire door Internal fibrous core	No Asbestos Detected
N 8235	Alex Grimson, Ground Floor east, disabled toilet east of bedroom #60, beneath ceramic wall tiles Fibre cement sheeting	No Asbestos Detected
N 8236	Alex Grimson, Ground Floor east, disabled toilet east of bedroom #60, wall cavity pipe riser, lower lagged pipe with brown tape Internal fibrous insulation	No Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 8237	Alex Grimson, Ground Floor east, eastern fire hose reel cupboard, floor Fibrous dust	No Asbestos Detected
N 8238	Alex Grimson, Ground Floor east, ceiling cavity, east, air conditioning ductwork, metal angle sealant Mastic sealant	Chrysotile Asbestos Detected
N 8239	Alex Grimson, Ground Floor east, ceiling cavity above bed #32, south western corner ceiling copper pipe penetration sealant Mastic sealant	No Asbestos Detected
N 8240	Alex Grimson, Ground Floor east, disabled toilet east of bedroom #60, south of reception desk, main electrical distribution cupboard, ceiling wire penetration insulation Fibrous insulation	No Asbestos Detected
N 8306	Alex Grimson, basement, south western fire stairs, fire door Internal fibrous core	No Asbestos Detected
N 8307	Alex Grimson, basement, north western corner, western end of main east west corridor, fire hose reel cupboard Fibrous dust	No Asbestos Detected
N 8308	Alex Grimson, basement, northern end, adjacent eastern of morgue, corridor, fire hose reel cupboard, floor Fibrous dust	No Asbestos Detected
N 8309	Alex Grimson, basement, northern end of eastern north south corridor, switchboard, floor penetration insulation Fibrous vermiculite	No Asbestos Detected
N 8310	Alex Grimson, Ground Floor, southern side, main enclosed walkway to mental health building, internal walls Compressed fibre cement sheeting	Chrysotile Asbestos Detected
N 8311	Alex Grimson, Ground Floor, southern wing, southern fire hose reel cupboard, ceiling pipe penetration Fibrous concrete debris	No Asbestos Detected
N 8312	Alex Grimson, Ground Floor, southern wing, renal allied health office, north eastern a/c riser cupboard, wall penetration Mastic sealant	No Asbestos Detected
N 8313	No sample	
N 8314	Alex Grimson, Third Floor, plant room, south eastern water tank bund membrane Bituminous sheeting	Chrysotile Asbestos Detected
N 8315	Alex Grimson, Third Floor, north western switch room, walls Fibre cement sheeting	No Asbestos Detected
N 8316	Alex Grimson, Third Floor, north western switch room, eastern pebblecrete wall, expansion joint Mastic	No Asbestos Detected
N 8317	Alex Grimson, Third Floor, south western transformer room, door Internal fibrous door core	No Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 8318	Alex Grimson, Third Floor, north plant room, a/c duct work angles, sealant Mastic sealant	Chrysotile Asbestos Detected
N 8319	Alex Grimson, Third Floor, northern plant room, eastern laboratory hot water clarifier, pipe flange Gasket	Chrysotile Asbestos Detected
N 8320	Alex Grimson, Third Floor, northern plant room, heating water exchanger, southern seal flange Gasket	No Asbestos Detected
N 8321	Alex Grimson, Third Floor, northern plant room, south eastern main water tank, between metal base and tank Bituminous sheeting	No Asbestos Detected
N 8322	Alex Grimson, Third Floor, roof top, adjacent eastern exit onto roof, floor area Fibre cement sheet debris	No Asbestos Detected
N 8323	Alex Grimson, Third Floor, rooftop, debris on top of exiting bituminous membrane Bituminous membrane sheet debris	Chrysotile Asbestos Detected
N 8324	Alex Grimson, Second Floor, south western corner, north south corridor, southern end, electrical cable duct Fibre cement sheeting	No Asbestos Detected
N 8325	Alex Grimson, Second Floor, eastern wing, north western tutorial room, wall covering Wall paper	No Asbestos Detected
N 8326	Alex Grimson, Second Floor, western wing, south western male toilet, wall cavity adjacent vanity unit, floor Fibre cement sheet debris	No Asbestos Detected
N 8327	Alex Grimson, under croft area, plant/pump room, northern side, level 1 heat exchanger, pipe insulation Mastic sheath	No Asbestos Detected
N 8328	Alex Grimson, under croft area, plant/pump room, north western corner, adjacent ladder to upper level, eastern wall, wall penetration, internal debris Fibrous dust/dirt	No Asbestos Detected
N 8329	Alex Grimson, under croft area, northern subfloor area, pipe chase, north of access stairs, debris on floor Fibrous vermiculite debris	No Asbestos Detected
N 8330	Alex Grimson, under croft area, northern subfloor area, pipe chase, north western area, ceiling penetration insulation Fibrous vermiculite	No Asbestos Detected
N 8331	Alex Grimson, external, western side, northern end, PMG pit, in soil Fibre cement pit	No Asbestos Detected
N 8332	Alex Grimson, external, western side, northern end, debris in soil Fibre cement sheet debris	Chrysotile Asbestos Detected
N 8333	Alex Grimson, external, northern side, western end, lower wall used as formwork Fibre cement sheeting	Chrysotile Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 8334	Alex Grimson, external, northern side, western end, packing between brick wall and horizontal concrete ledge Fibre cement sheet debris	Chrysotile Asbestos Detected
N 8335	Alex Grimson, external, northern side, eastern end, membrane between brick wall and horizontal concrete ledge Rubberised sheeting	No Asbestos Detected
N 8336	Alex Grimson, external, northern side, eastern end, water tap pipe sealant Rubberised sheeting	No Asbestos Detected
N 8337	Alex Grimson, demountable building attached to eastern side of the southern wing, subfloor brick pylon packing Fibre cement sheeting	No Asbestos Detected
N 8338	Alex Grimson, external, eastern side north of demountable building attached to eastern side of the southern wing, ground debris Fibre cement sheet debris	Chrysotile Asbestos Detected
N 8339	Alex Grimson, attached walkway to mental health building, external wall Compressed fibre cement sheeting	Chrysotile Asbestos Detected
N 8340	Alex Grimson, external, eastern side west of demountable building attached to eastern side of the southern wing, ground debris Compressed fibre cement sheet debris	Chrysotile Asbestos Detected
N 8341	Drugs & Alcohol, ground floor, basement cleaners room, eastern wall, old boiler flue pipes Fibre cement pipe	Chrysotile Asbestos Detected
N 8342	Drugs & Alcohol, first floor, female toilet, western wall Fibre cement sheeting	No Asbestos Detected
N 8343	Rainbow Cottage, main office, northern wall, electrical distribution box, box base Fibrous dust/dirt	No Asbestos Detected
N 8344	Rainbow Cottage, north western staff toilet, cubicle walls Compressed fibre cement sheeting	No Asbestos Detected
N 8345	Rainbow Cottage, northern photocopy room, floor Blue & light blue square pattern vinyl floor sheeting	No Asbestos Detected
N 8346	Rainbow Cottage, external eaves Fibre cement sheeting	No Asbestos Detected
N 8347	Ron Dunbier, second floor, south main plant room, southern hot water pump, pipe flange Gasket	No Asbestos Detected
N 8348	Ron Dunbier, rooftop, flue pipes from unit hot water heaters Fibre cement pipes	Chrysotile Asbestos Detected
N 8349	Ron Dunbier, rooftop, external wall water drain, half pipes Fibre cement pipes	Chrysotile Asbestos Detected
N 8350	Ron Dunbier, second floor, room 216, entrance foyer, floor Light brown with dark grey flecked vinyl floor sheeting	No Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 8351	Ron Dunbier, second floor, northern fire stairs, internal door core Fibrous core insulation	Chrysotile & Amosite Asbestos Detected
N 8352	Building removed	N/A
N 8353	Don Everett, basement floor, adjacent southern end of main north south corridor, chilled water pipe flange Gasket	No Asbestos Detected
N 8354	Don Everett, basement floor, eastern subfloor area, eastern end, midway, disused metal plumbers pipes, internal debris Fibrous debris	No Asbestos Detected
N 8355	Don Everett, ground floor, eastern wing, main east west corridor, southern side, double fire doors, internal core Internal fibrous core insulation	Amosite Asbestos Detected
N 8356	Don Everett, ground floor, eastern wing, main east west corridor, eastern end, emergency exit door, window frame seal Mastic sealant	Chrysotile Asbestos Detected
N 8357	Central Energy, ground floor, external eastern driveway/roller door, floor drain pipe penetration Fibre cement pipe	Chrysotile & Amosite Asbestos Detected
N 8358	Don Everett, first floor, eastern wing, main office, ceiling cavity, east west insulated beam Vermiculite insulation	No Asbestos Detected
N 8359	Don Everett, rooftop plant room, air conditioning ductwork, metal angle sealant Mastic sealant	Chrysotile Asbestos Detected
N 8360	Don Everett, rooftop plant room, south western corner, air conditioning exhaust ductwork, external insulation Fibrous insulation	Chrysotile Asbestos Detected
N 8361	C Core building, roof cavity, wall sheeting Fibre cement sheeting	Chrysotile Asbestos Detected
N 8362	Central Energy, ground floor, back-up generator room, eastern wall Compressed fibre cement sheeting	No Asbestos Detected
N 8363	Central Energy, ground floor, south western corner, high temperature hot water line, pipe flange Gasket	No Asbestos Detected
N 8364	Central Energy, ground floor, south western corner, Hurt Sile packaged fire tube boiler unit, eastern end, door panel seal Gasket	No Asbestos Detected
N 8365	Central Energy, ground floor, north eastern corner, MTW heating vessel no. 2, southern end, door panel, flange Gasket	No Asbestos Detected
N 8366	Central Energy, ground floor, north eastern corner, MTW heating vessel no. 2, south eastern pipe, above, disused, exposed pipe flange Gasket debris	Chrysotile Asbestos Detected
N 8367	Central Energy, ground floor, north eastern corner, MTW heating vessel no. 1, northern end door panel, flange Gasket	No Asbestos Detected

Sample No.	Sample Size And Description	Asbestos Content
N 8368	Central Energy, ground floor, north eastern corner, north eastern of MTW heating vessel no. 1, silver Blowdown tank, floor pipe penetration insulation Fibrous debris	No Asbestos Detected
N 8369	Central Energy, ground floor, north western York chiller units, northern end pipe insulation Flexible bituminous sealant	No Asbestos Detected
N 8370	Sample Removed	N/A
N 8371	Central Energy, ground floor, eastern entrance door, lower wall panel Fibre cement sheeting	No Asbestos Detected
N 8372	Basement Tunnel, beneath Alex Grimson, eastern side, wall expansion joint Mastic sealant	No Asbestos Detected
N 8373	Basement Tunnel, east of Physical Resources & Engineering, wall expansion joint Mastic sealant	No Asbestos Detected
N 8374	Staff Development, western end, main corridor, roof cavity access panel Fibre cement sheeting	No Asbestos Detected
N 8375	Staff Recreation, external, north eastern corner PMG ground pit Fibre cement pit	No Asbestos Detected
N 8376	Staff Recreation, eaves Fibre cement sheeting	No Asbestos Detected
N 8377	Staff Development, midway, roof cavity, original building ceiling, beneath roof Fibre cement sheeting	Chrysotile Asbestos Detected
N 8378	Staff Development, external eaves Fibre cement sheeting	Chrysotile Asbestos Detected
N 8379	Staff Recreation, female toilet, cubicle walls Compressed fibre cement sheeting	No Asbestos Detected
N 8380	Staff Recreation, kitchen, ceiling Fibre cement sheeting	No Asbestos Detected
N 8381	Staff Recreation, shower/locker room, ceiling Fibre cement sheeting	No Asbestos Detected
N 8382	Interpreter, entrance ceiling Fibre cement sheeting	No Asbestos Detected

REPORT COMMENTS

The samples were examined under a stereomicroscope in the laboratory. Fibres suspected of being asbestos were removed from the bulk sample and examined using polarising light microscopy with dispersion staining techniques.

The presence of asbestos within samples can be problematic and sometimes unable to be detected as some materials possess low grade or small length/diameter fibres. Another problem can be linked to the uneven distribution of fibres within the sample.

Sample analysis results are approved and authorised by the Asbestos Laboratory Analyst.

This analysis report has been issued by EMS under our General Terms and Conditions of Trade which are available upon request. In particular this refers to a section on limitations of liability, etc.

This analysis report has been issued on behalf of SSWAHS and any information found within indicates the finding at the time of the analysis and for SSWAHS information alone.

Laboratory Analyst

Robert Johnson
for Environmental Monitoring Services

13.1.4 Laboratory Reports for 2012 – 2014

Laboratory reports from 2012 and 2014 are available upon request.

The results of these have already been incorporated into the Register in the form of positively identified asbestos or within the Asbestos Free Materials Summary in Section 8.

14 APPENDIX C: 2019 LABORATORY ANALYSIS REPORT

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 216033

Client Details

Client	Environmental Monitoring Services
Attention	Edward Krasilovsky
Address	PO Box 334, Paddington, NSW, 2021

Sample Details

Your Reference	**C19 8144, Liverpool**
Number of Samples	5 Material
Date samples received	18/04/2019
Date completed instructions received	18/04/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	30/04/2019
Date of Issue	23/04/2019

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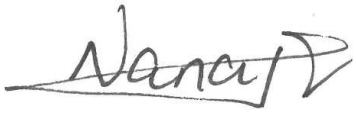
Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos
Authorised by Asbestos Approved Signatory: Matt Tang
Results Approved By
Matthew Tang, Asbsestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - materials						
Our Reference		216033-1	216033-2	216033-3	216033-4	216033-5
Your Reference	UNITS	M3034	M3035	M3036	M3037	M3038
Date Sampled		15.04.19	15.04.19	15.04.19	16.04.19	16.04.19
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	23/04/2019	23/04/2019	23/04/2019	23/04/2019	23/04/2019
Mass / Dimension of Sample	-	5x5x1mm	30x15x10mm	95x40x2mm	15x15x3mm	25x15x3mm
Sample Description	-	White fibrous material	Black hard bituminous material	Beige vinyl tile	White fibre cement material	Black hard bituminous material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Synthetic mineral fibres detected Organic fibres detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported